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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,138	11/25/2003	Kevin Li	NC34682	9453
4955 7590 06/01/2007 WARE FRESSOLA VAN DER SLUYS & ADOLPHSON, LLP BRADFORD GREEN, BUILDING 5 755 MAIN STREET, P O BOX 224 MONROE, CT 06468			EXAMINER ADDY, ANTHONY S	
			ART UNIT 2617	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/723,138

Applicant(s)

LI, KEVIN

Examiner

Anthony S. Addy

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-24 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to applicant's amendment filed on March 05, 2007.
New **claims 25** and **26** have been added. **Claims 1-26** are now pending in the present application.

Response to Arguments

2. Applicant's arguments with respect to **claims 1-26** have been considered but are moot in view of the new ground(s) of rejection. Arguments are directed to newly added limitations and the new ground(s) of rejection based on the newly added limitations follow below.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. **Claims 21-23** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 21, applicant recites the limitation "the second antenna" on line 6 of claim 21, however there is insufficient antecedent basis for this limitation in the claim.

With respect to claim 21, applicant recites the limitation "the first frequency band" on lines 9-10 & 15 of claim 21, however there is insufficient antecedent basis for this limitation in the claim.

With respect to claim 22, applicant recites the limitation "the second frequency band" on line 6 of claim 21, however there is insufficient antecedent basis for this limitation in the claim.

With respect to claim 23, they include the same issues explained above for parent claim 22, and is rejected for the same reasons explained above.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 2, 5, 6, 8, 9, 11, 13, 17, 20, 22, 24 and 25-26 are rejected under 35 U.S.C. 102(e) as being anticipated by **Hong, U.S. Publication Number 2003/0125078 A1 (hereinafter Hong)**.

Regarding claims 1 and 22, Hong teaches an apparatus, comprising: a first antenna that facilitates reception of signals in at least a first frequency band (see p. 2 [0026-0027 & 0031] and Fig. 3; shows a first multiband antenna 310 that facilitates reception of signals in at least CDMA band); and a second antenna that facilitates reception of signals in a second frequency band and at least the first frequency band received by the first antenna (see p. 2 [0026-0027 & 0031] and Fig. 3; shows a second multiband antenna 312 that facilitates reception of signals in a GPS band and at least one of the bands received by the first antenna 310 [i.e. the CDMA band]), wherein tuning of the second antenna depends upon a signal type relayed to the second

antenna (see p. 2 [0028-0029] and p. 3 [0032] [i.e. the limitations “wherein tuning of the second antenna depends upon a signal type relayed to the second antenna” is met by the teaching of Hong that a comparator compares a first RSSI signal of a signal received by the first antenna to a second RSSI signal of a signal received by the second antenna, and if the second RSSI signal is larger than the first RSSI, the switch provides a control signal to select the RF signal from the second antenna]).

Regarding claims 17 and 24, Hong teaches a method, comprising: providing a first antenna that facilitates reception of signals in at least a first frequency band (see p. 2 [0026-0027 & 0031] and Fig. 3; shows a first multiband antenna 310 that facilitates reception of signals in at least CDMA band); providing a second antenna that facilitates reception of signals in a second frequency band and at least the first frequency band received by the first antenna (see p. 2 [0026-0027 & 0031] and Fig. 3; shows a second multiband antenna 312 that facilitates reception of signals in a GPS band and at least one of the bands received by the first antenna 310 [i.e. the CDMA band]); determining whether a signal in the second frequency band is desirably received by the second antenna (see p. 2 [0028-0029]); and tuning the second antenna to facilitate reception of a signal in at least the first frequency band received by the first antenna if the reception of a signal in the second frequency band is not desirable (see p. 2 [0028-0029] and p. 3 [0032]).

Regarding claims 2, 13 and 20, Hong teaches all the limitations of claims 1 and 17. Hong further teaches a mobile telephone (see *Hong*, p. 2 [0025] and Fig. 3), further comprising tuning the second antenna to receive a signal in the second frequency band

if a signal in the second frequency band is desirably received by the second antenna (see *Hong*, p. 2 [0026-0030]).

Regarding claim 5, Hong teaches all the limitations of claim 1. Hong further teaches the apparatus, further comprising: a first tuning component that facilitates tuning the second antenna for reception of signals in the second frequency band; and a second tuning component that facilitates tuning the second antenna for reception of signals in at least the first frequency band received by the first antenna (see *Hong*, p. 2 [0026-0031]).

Regarding claim 8, Hong teaches all the limitations of claim 1. Hong further teaches the apparatus, further comprising: a first receiving component that facilitates at least one of transduction, modulation, and processing of a signal in at least the first frequency band received by the first antenna; and a second receiving component that facilitates at least one of transduction, modulation, and processing of a signal in the second frequency band (see *Hong*, p. 2 [0026-0031]).

Regarding claims 6 and 9, Hong teaches all the limitations of claims 5 and 8. Hong further teaches the apparatus, further comprising a RF switch (340) that facilitates coupling the second antenna to one of the first tuning component and the second tuning component (see *Hong*, p. 2 [0026, 0028-0029] and Fig. 3).

Regarding claim 11, Hong teaches all the limitations of claim 1. Hong further teaches the apparatus, further comprising a component that determines frequency of a signal desirably received by the second antenna (see *Hong*, p. 2 [0026-0031]).

Regarding claim 25, Hong teaches all the limitations of claim 1. Hong further teaches the apparatus, wherein the first frequency band is a personal communication service band, a cellular band, a Korean personal communication band, or a China personal communication service band ((see p. 2 [0026-0027 & 0031])).

Regarding claim 26, Hong teaches all the limitations of claim 1. Hong further teaches the apparatus, wherein the second frequency band is a global positioning band ((see p. 2 [0026-0027 & 0031])).

7. Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hong, U.S. Publication Number 2003/0125078 A1 (hereinafter Hong)** as applied to claims 5 and 9 above, and further in view of **Braun et al., U.S. Patent Number 6,980,782 (hereinafter Braun)**.

Regarding claims 7 and 10, Hong in view of Enoki teaches all the limitations of claims 5 and 9. Hong fails to explicitly teach the radio frequency switch being one of a PIN-diode, a micro electro-mechanical system switch, and a field effect transistor switch.

In an analogous field of endeavor, Braun teaches an antenna device for transmitting and receiving radio frequency waves installable in a communication device includes an antenna structure switchable between antenna configuration states, wherein an antenna switching unit may be PIN diode switches, GaAs field effect transistors (FET), or microelectromechanical system (MEMS) switches (see abstract, col. 11, lines 15-24 and Fig. 7a).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify Hong with Braun, wherein the RF switch is one of a PIN-diode, a MEMS switch, and a FET switch, in order to electrically connect and disconnect antenna elements in parallel or in series with each other, or completely connect or disconnect one or more antenna elements to ground as taught by Braun (see col. 11, lines 15-24).

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hong, U.S. Publication Number 2003/0125078 A1 (hereinafter Hong)** as applied to claim 1 above, and further in view of **Balchunas et al., U.S. Publication Number 2006/0097171 A1 (hereinafter Balchunas)**.

Regarding claim 12, Hong teaches all the limitations of claim 1. Hong fails to explicitly teach a system, further comprising an emergency component that automatically configures the second antenna to receive a signal in the second frequency band upon transmitting data to an emergency number.

In an analogous field of endeavor, Balchunas teaches a GPS enabled wireless personal communication device, further comprising an emergency component that automatically configures the second antenna to receive a GPS signal upon transmitting data to an emergency number (see p. 5 [0045 & 0047] and Fig. 3; shows an automatic dialer 335 [i.e. reads on emergency component] that automatically configures antenna 375 to receive a GPS signal).

It would therefore have been obvious to one of ordinary skill in the art at the of the invention to modify Hong with the teachings of Balchunas, in order to enable various communications without user interface, such as autodialing using an automatic dialer module to dial the number of an emergency response center to report pertinent information regarding radiation levels and provide location specific information as taught by Balchunas (see p. 5 [0044-0048]).

9. Claims 3, 4, 15 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hong, U.S. Publication Number 2003/0125078 A1 (hereinafter Hong)** as applied to claims 1 and 22 above, and further in view of **Eggleston, U. S. Patent Number 6,414, 640 (hereinafter Eggleston)**.

Regarding claims 3, 4, 15 and 23, Hong teaches all the limitations of claims 1 and 22. Hong fails to explicitly teach the second antenna is a top-mounted inverted F-antenna and the inverted F-antenna exhibits circular polarization characteristics.

However, the use of a top-mounted inverted F-antenna exhibiting circular polarization characteristics is very well known in the art as taught for example by Eggleston. Eggleston teaches a top-mounted inverted F-antenna (TOPIFA) used in a mobile station, and wherein the top-mounted inverted F-antenna assembly exhibits circular polarization characteristics (see col. 3, lines 35-47, col. 3, lines 64-67, col. 5, lines 39-52 and Fig. 3). According to Eggleston, the antenna assembly is used in a mobile station operable pursuant to conventional cellular operation as well as to receive GPS signals used for positioning purposes and because of the circular polarization

characteristics of the resultant antenna transducer, a relatively high antenna gain characteristic is provided by the antenna transducer (see col. 6, lines 29-41).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to implement the antenna assembly of Eggleston in the communication system of Hong, in order to realize a relatively high antenna gain characteristic.

10. Claims 14, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hong, U.S. Publication Number 2003/0125078 A1 (hereinafter Hong)** as applied to claims 1 and 17 above, and further in view of **Well Known Prior Art – Official Notice**.

Regarding claims 14, 18 and 19, Hong teaches all the limitations of claims 1 and 17. Hong fails to explicitly teach a radiating element that is coupled to a transmission line, wherein length of the transmission line is selectable between at least two lengths and altering an electrical length of a resonating element associated with the second antenna to tune the second antenna.

However, the examiner takes Official Notice that it is very well known in the art to alter or vary the length of a transmission line coupled to an antenna element for tuning purposes of the antenna. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to alter or vary the length of a transmission line coupled to an antenna of Hong, to tune the multiple antennas to operate in a desired band.

Allowable Subject Matter

11. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony S. Addy whose telephone number is 571-272-7795. The examiner can normally be reached on Mon-Thur 8:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc M. Nguyen can be reached on 571-272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A.S.A


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